STAIRVILLE

DJ Lase
BlueStar MK-II LED

showlaser

th•mann
MUSIC IS OUR PASSION

user manual

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1 General notes

This user manual contains important information on safe operation of the device. Read and follow all safety notes and all instructions. Save this manual for future reference. Make sure that it is available to all persons using this device. If you sell the device, include the manual for the next owner.

Our products are subject to a process of continuous development. We therefore reserve the right to make changes without notice.

Symbols and signal words

This section provides an overview of the symbols and signal words used in this user manual.

Signal word	Meaning
DANGER!	This combination of symbol and signal word indicates an immediate dangerous situation that will result in death or serious injury if it is not avoided.
WARNING!	This combination of symbol and signal word indicates a possible dangerous situation that can result in death or serious injury if it is not avoided.
NOTICE!	This combination of symbol and signal word indicates a possible dangerous situation that can result in material and environmental damage if it is not avoided.

Warning signs	Type of danger
	Warning – high-voltage.
	Warning – laser radiation.

Warning signs	Type of danger
	Warning – suspended load.
	Warning – danger zone.

2 Safety instructions

Intended use

This device is intended to be used for the projection of laser light effects. It has been designed exclusively for show applications. Use the device only as described in this user manual. Any other use or use under other operating conditions is considered to be improper and may result in personal injury or property damage. No liability will be assumed for damages resulting from improper use.

This device may be used only by persons with sufficient physical, sensorial, and intellectual abilities and having corresponding knowledge and experience. Other persons may use this device only if they are supervised or instructed by a person who is responsible for their safety.

Laser safety basics

Laser safety requirements are based on DIN EN 60825-1. The corresponding accident prevention regulation of the Accident Prevention and Insurance Association in Germany is BGV-B2.

This device contains a class-3B laser. It is equipped with a safety key. Always remove the key when the device is not attended by a trained operator.

As an operator you are responsible for the safety of all persons present. Familiarize yourself with the laser safety regulations that apply in your country. To ensure safe operation, it is important to pay attention to the following instructions.

Prior to commissioning, the company/operator must appoint a qualified person as laser protection officer in writing and notify the operation of the laser equipment to the Accident Prevention and Insurance Association and to the authority responsible for occupational safety. In the event of public use, the complete laser equipment must be approved by an expert (e. g. the Technical Control Board TÜV) prior to commissioning.

Safety

DANGER!

Danger for children

Ensure that plastic bags, packaging, etc. are disposed of properly and are not within reach of babies and young children. Choking hazard!

Ensure that children do not detach any small parts (e.g. knobs or the like) from the unit. They could swallow the pieces and choke!

Never let children unattended use electrical devices.

DANGER!

Electric shock caused by high voltages inside

Within the device there are areas where high voltages may be present. Never remove any covers.

There are no user-serviceable parts inside.

DANGER!

Electric shock caused by short-circuit

Always use proper ready-made insulated mains cabling (power cord) with a protective contact plug. Do not modify the mains cable or the plug. Failure to do so could result in electric shock/death or fire. If in doubt, seek advice from a registered electrician.

DANGER!

Laser radiation – avoid exposure to beam

The device contains a class-3B laser, classified according to EN 60825-1. Do not look into the laser beam. The laser beam can injure your eyes when you directly look into it. Do not expose yourself to the laser beam. The laser beam can cause skin burns.

In this context take extreme care when using converging optical instruments.

WARNING!

Eye damage caused by high light intensity

Never look directly into the light source.

WARNING!

Risk of epileptic shock

Strobe lighting can trigger seizures in photosensitive epilepsy. Sensitive persons should avoid looking at strobe lights.

NOTICE!

Laser radiation – risk of fire

Keep the area exposed to laser radiation free from flammable substances.

NOTICE!

Risk of fire

Do not cover the device nor any ventilation slots. Do not place the device near any direct heat source. Keep the device away from naked flames.

NOTICE!

Operating conditions

This device has been designed for indoor use only. To prevent damage, never expose the device to any liquid or moisture. Avoid direct sunlight, heavy dirt, and strong vibrations.

NOTICE!

Power supply

Before connecting the device, ensure that the input voltage (AC outlet) matches the voltage rating of the device and that the AC outlet is protected by a residual current circuit breaker. Failure to do so could result in damage to the device and possibly injure the user.

Unplug the device before electrical storms occur and when it is unused for long periods of time to reduce the risk of electric shock or fire.

3 Features

This showlaser is specially suited for discos, clubs, bars, small stages, etc. and can be easily integrated into the light show or operated in 'stand alone' mode. The two laser diodes together with the LED background illumination provide extraordinary special effects.

Special features of this device:

- Control via DMX (7 channels) and via buttons and display on the unit
- Preprogrammed automatic shows
- Sound control
- Master / slave mode
- Laser diodes:
  - Red: 100 mW
  - Green: 40 mW
- Blue LED background illumination with projection lens

4 Installation

Unpack and carefully check that there is no transportation damage before using the unit. Keep the equipment packaging. To fully protect the device against vibration, dust and moisture during transportation or storage use the original packaging or your own packaging material suitable for transport or storage, respectively.

You can install the device on the wall, ceiling or floor. A mounting bracket and the necessary screws are included in the package.

DANGER!

Laser radiation

During installation you have to follow the instructions given here: *Chapter 2 'Safety instructions' on page 8*.

To avoid unintended laser radiation, remove the safety switch before you start the installation of the device.

WARNING!

Stray laser radiation

Inadequately secured additional components may cause stray laser radiation.

Make sure that all additional components are adequately secured.

WARNING!

Risk of injury caused by falling objects

Make sure that the installation complies with the standards and rules that apply in your country. Always secure the device with a secondary safety attachment, such as a safety cable or a safety chain.

NOTICE!

Risk of overheating

The distance between the light output and the illuminated surface must be more than 0.5 m (19.7 in).

Always ensure sufficient ventilation.

The ambient temperature must always be below 40 °C (104 °F).

DMX connections

The unit offers a 3-pin XLR socket for DMX output and a 3-pin XLR plug for DMX input. Please refer to the drawing and table below for the pin assignment of a suitable XLR plug.

Pin	Configuration
1	Ground, shielding
2	Signal inverted (DMX–, 'cold signal')
3	Signal (DMX+, 'hot signal')

5 Starting up

Establish all connections as long as the unit is switched off. Use the shortest possible high-quality cables for all connections.

DANGER!

Laser radiation

When starting up the device, you have to follow the instructions given here:
↳ *Chapter 2 'Safety instructions' on page 8*.

NOTICE!

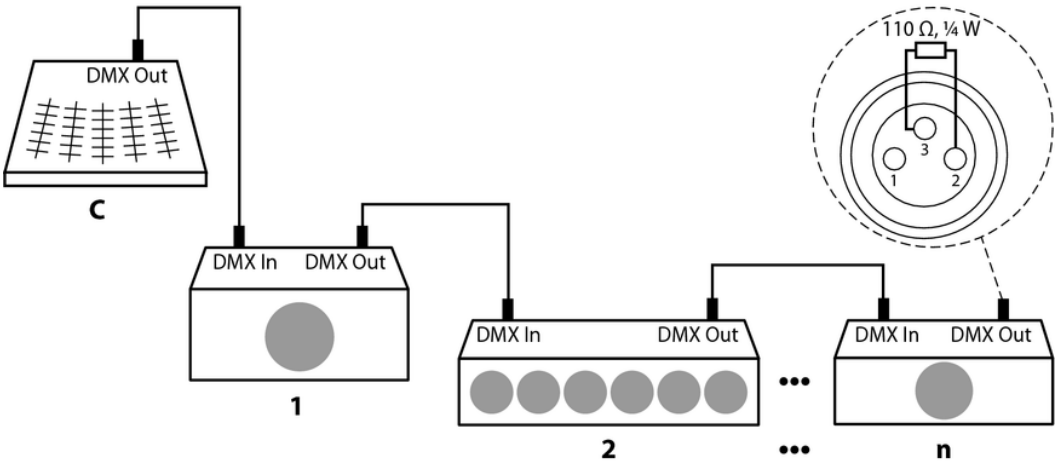
Possible data transmission errors

For error-free operation make use of dedicated DMX cables and do not use ordinary microphone cables.

Never connect the DMX input or output to audio devices such as mixers or amplifiers.

Connections in DMX mode

Connect the DMX input of the device to the DMX output of a DMX controller or another DMX device. Connect the output of the first DMX device to the input of the second one, and so on to form a daisy chain. Always ensure that the output of the last DMX device in the daisy chain is terminated with a resistor (110 Ω, ¼ W).

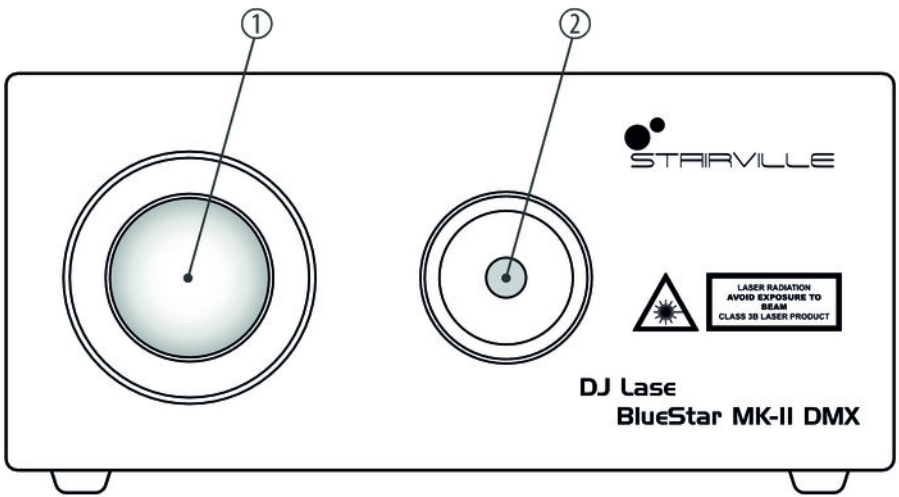


Connections in master/slave mode

When you configure a group of devices in master/slave mode, the first unit will control the other units for an automatic, sound-activated, synchronized show. This function is ideal when you want to start a show immediately. Connect the DMX output of the master device to the DMX input of the first slave device. Then connect the DMX output of the first slave device to the DMX input of the second slave device and so on.

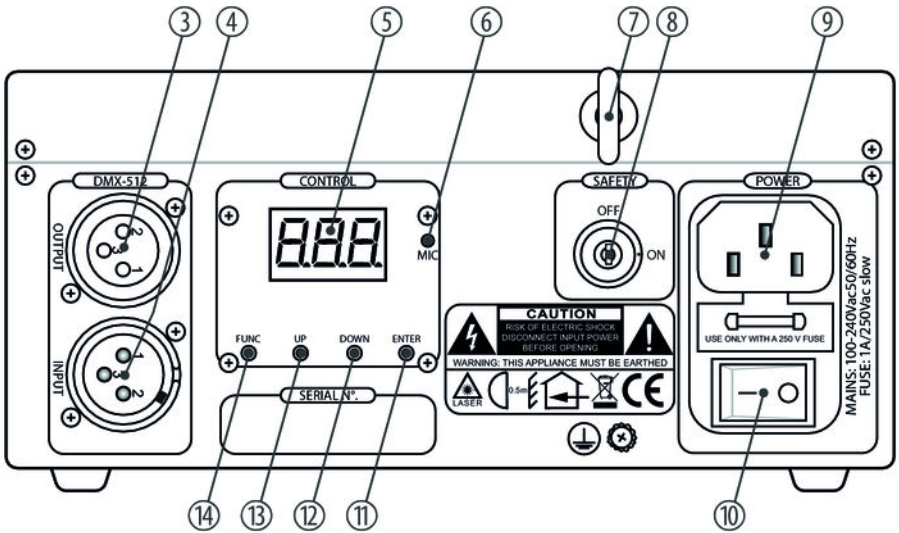
6 Components and functions

Front panel



1	Projection lens for LED background illumination.
1	Laser aperture.

Rear panel


3
4
5
6
7
8
9
DMX-512
OUTPUT
INPUT
CONTROL
MIC
FUNC
UP
DOWN
ENTER
SERIAL N°.
SAFETY
OFF
ON
CAUTION
RISK OF ELECTRIC SHOCK
DISCONNECT INPUT POWER
BEFORE OPENING
WARNING: THIS APPLIANCE MUST BE EARTHED
LASER
POWER
USE ONLY WITH A 250 V FUSE
MAINS: 100-240Vac-50/60Hz
FUSE: 1A/250Vac slow
14
13
12
11
10

3	**OUTPUT** DMX output.
4	**INPUT** DMX input.
5	Display.
6	**MIC** Microphone for operating mode ‘Sound controlled’.
7	Safety eye.
8	**SAFETY** Safety key switch to turn the laser output on or off.
9	IEC chassis connector for the mains cable. Beneath, the proper operating voltage is indicated.
10	**POWER** Mains switch to turn the unit on or off.

11	*[ENTER]* button Selects an option of the respective operating mode.
12	*[DOWN]* button Decreases the indicated value by one.
13	*[UP]* button Increases the indicated value by one.
14	*[FUNC]* button Opens up the main menu.

7 Operation

7.1 Starting and stopping the device

Starting

Carry out the following steps to take the unit into operation:

1. Check to see whether all laser safety precautions have been taken. Make sure that nobody is in range of the laser beam.
2. Insert the safety key into the lock (8).
3. If not already done, connect the device to a mains power outlet (9).
4. Turn the unit on using the main switch (10). After a few seconds, the fan and the motors start to work. The display shows the current operating mode. The unit is now operational.
5. Turn the safety key (8) into the 'ON' position to turn the laser beam on.

Stopping

Carry out the following steps to stop the unit:

1. Turn the safety key (8) into the 'OFF' position to turn the laser beam off and pull the key off. Keep the safety key in a safe place.
2. Turn the unit off using the main switch (10).
3. Additionally, you can disconnect the device from the power supply (9).

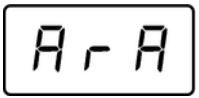
7.2 Main menu

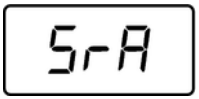
Press *[FUNC]* to activate the main menu and select one of the operation modes.

When the display is flashing, use the *[UP]* and *[DOWN]* buttons to change the respectively shown value. When the display shows the desired value, press *[ENTER]*. To discard all changes and exit back to the main menu press *[FUNC]* or wait a minute.

All previous settings are saved even if you disconnect the device from the mains power supply

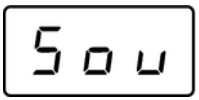
Operating mode ‘Auto Show’





Press *[FUNC]* repeatedly until the display shows ArA or SrA and starts flashing. The device operates in stand alone mode and displays a preprogrammed show. ‘ArA’ provides a show with fast effects, ‘SrA’ provides slow effects. Press *[ENTER]* to save the value and to start operation in ‘Auto Show’ mode.

Operating mode ‘Sound-controlled’ and adjusting the response characteristic



Press *[FUNC]* repeatedly until the display shows Sou and starts flashing. The device operates in stand alone mode and displays a sound-controlled preprogrammed show. In this menu you can adjust the sensitivity and thus the response characteristic of the microphone. Press *[ENTER]* to save the setting.

Now the display shows S 6. Use the *[UP]* and *[DOWN]* buttons to select the settings ‘S 0’ (sensitivity = 0, operation mode ‘Sound-controlled’ is off) or ‘S 1’ (low sensitivity) to ‘S 9’ (high sensitivity). Press *[ENTER]* to save the setting.

Operating mode ‘Manual“

Press *[FUNC]* repeatedly until the display shows MAn. Press *[ENTER]* to confirm.

In this mode you can set the laser diode and the LED for the backlight illumination manually. The following table shows the possible settings:

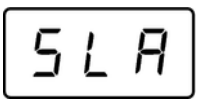
Display	Description
R 0…R 9	Red laser flash frequency, fast to slow
G 0…G 9	Green laser flash frequency, fast to slow
M10…M19	Laser dot movement, slow to fast
M20…M29	Blue LED backlight illumination movement, slow to fast
Lb0…Lb9	Blue LED backlight illumination brightness
LF0…LF9	Blue LED backlight illumination flash frequency, fast to slow

Operating mode ‘DMX’

Press *[FUNC]* repeatedly until the display shows 001. Now you can adjust the number of the first DMX channel (DMX address) used by the unit. Select a value between 1 and 511 using the *[UP]* and *[DOWN]*. Press *[ENTER]* to store the value and to start operation in DMX mode.

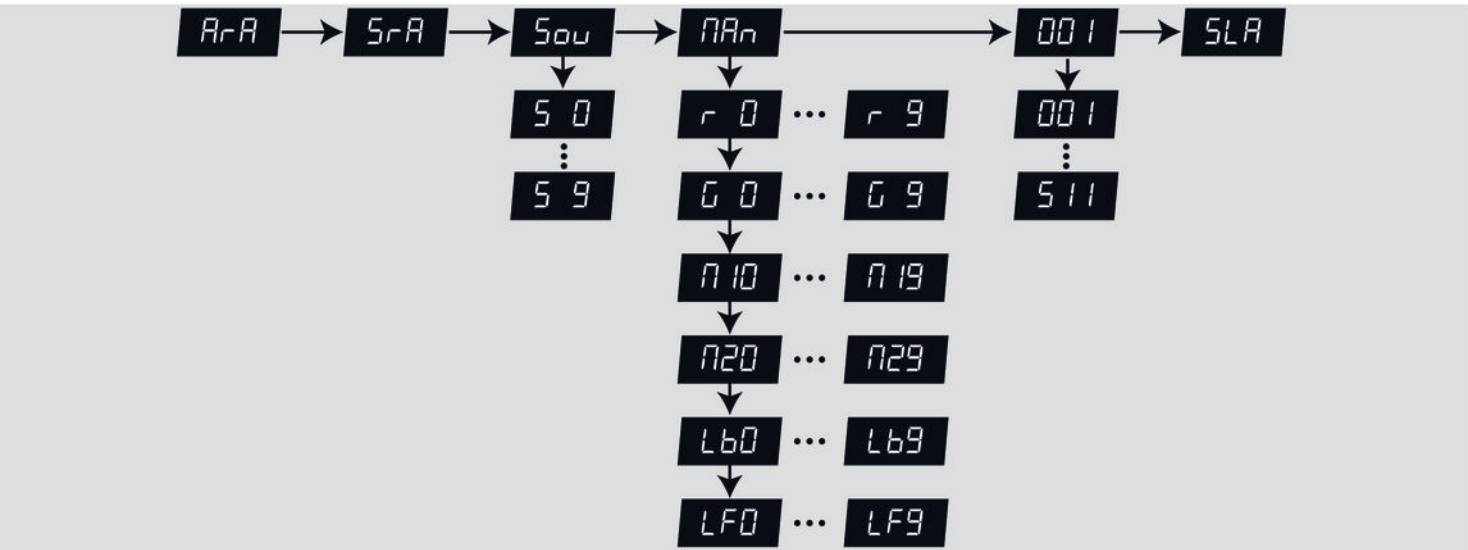
Make sure that this number corresponds with the configuration of your DMX controller.

Operating mode ‘Master/Slave’



Press *[FUNC]* repeatedly until the display shows SLA. In this operation mode the unit follows exactly the master device that it is connected to. Press *[ENTER]* to confirm and to start operation in ‘Master/Slave’ mode.

7.3 Menu overview



7.4 Functions in ‘DMX’ mode

Channel	Value	Function
1	Operating mode selection	
	0…51	Laser off
	52…102	Automatic show in random order, fast
	103…154	Automatic show in random order, slow
	155…206	Sound controlled automatic show in random order
	207…255	Operating mode ‘DMX’: this setting activates the function of the other DMX channels
2	Red laser	
	0…4	Laser off
	5…127	Laser is constantly on
	128…254	Strobe effect (flashing), decreasing speed

Channel	Value	Function
	255	Sound controlled strobe effect (flashing)
3	Green laser	
	0…4	Laser off
	5…127	Laser is constantly on
	128…254	Strobe effect (flashing), decreasing speed
	255	Sound controlled strobe effect (flashing)
4	Rotation of the red and green laser around the Z-axis (rolling)	
	0…4	No rotation
	5…127	Rotation effect clockwise, increasing speed
	128…133	No rotation
	134…255	Rotation effect counter-clockwise, increasing speed
5	Rotation of the blue LED background illumination around the Z-axis (rolling)	
	0…4	No rotation

Channel	Value	Function
	5…127	Rotation effect counter-clockwise, increasing speed
	128…133	No rotation
	134…255	Rotation effect counter-clockwise, increasing speed
6	Intensity of the blue LED background illumination	
	0…4	Background illumination off
	5…255	Increasing brightness (0 %…100 %)
7	Strobe effect (flashing) of the blue LED background illumination	
	0…4	Background illumination off
	5…127	Background illumination is constantly on
	128…254	Strobe effect (flashing), decreasing speed
	255	Sound controlled strobe effect (flashing)

8 Troubleshooting

DANGER!

Laser radiation inside the housing

During troubleshooting you have to comply with the instructions given here:
Chapter 2 'Safety instructions' on page 8.

Any servicing of the unit (with open housing) must only be carried out by qualified technicians.

For working on the device you have to wear suitable laser safety goggles.

In the following we list a few common problems that may occur during operation. We give you some suggestions for easy troubleshooting:

Symptom	Remedy
The unit does not work, no light, the fan does not run	1. Check the mains power connection and the main fuse.
	2. Check the safety key switch.
No response to DMX controller	1. If the display indicates a flashing figure, e.g. '001', no DMX signal is received. Check the DMX connections and cables for proper connection.
	2. If the display is not flashing and the unit does not respond check the address settings and the DMX polarity.
	3. Try to use another DMX controller.
	4. Check to see if the DMX cables run near or alongside to high voltage cables that may cause damage or interference to DMX interface circuits.

If the procedures recommended above do not succeed, please contact our Service Center. You can find the contact information at *www.thomann.de*.

9 Cleaning

DANGER!

Laser radiation

During cleaning you have to follow the instructions given here: *Chapter 2 'Safety instructions' on page 8*.

To avoid unintended laser radiation, remove the safety switch before you begin to clean the device.

Optical lenses

Clean the exterior of accessible optical lenses periodically to optimise light output. The frequency of cleaning depends on the operating environment: wet, smoky or particularly dirty surroundings can cause more accumulation of dirt on the optics of the device.

- Clean with a soft cloth using normal glass cleaning products.
- Always dry the parts carefully.

10 Technical specifications

Laser medium	Red: 650 nm (typical), LD GaAlAs
	Green: 532 nm (typical), DPSS Nd:YV04
Laser power	Red: 100 mW
	Green: 40 mW
Laser classification acc. to EN 60825-1 2007	3B
Beam diameter at outlet aperture	< 5 mm
Pulses	All pulses < 4 Hz (> 0.25 s)
Divergence (per beam)	< 2 mrad
Divergence (overall light)	< 160°
LED (background illumination)	Blue: 5 W
Number of DMX channels	7
Operating voltage supply	AC 100 …240 V ~, 50/60 Hz

Fuse	5 mm × 20 mm, 1.0 A, 250 V, slow blow
Power consumption	15 W
Dimensions (W × D × H)	200 mm × 175 mm × 92 mm
Weight	1.5 kg

11 Protecting the environment

Disposal of the packaging material

For the transport and protective packaging, environmentally friendly materials have been chosen that can be supplied to normal recycling.

Ensure that plastic bags, packaging, etc. are properly disposed of.

Do not just dispose of these materials with your normal household waste, but make sure that they are collected for recycling. Please follow the notes and markings on the packaging.

Disposal of your old device

This product is subject to the European Waste Electrical and Electronic Equipment Directive (WEEE). Do not dispose with your normal household waste.

Dispose of this device through an approved waste disposal firm or through your local waste facility. When discarding the device, comply with the rules and regulations that apply in your country. If in doubt, consult your local waste disposal facility.

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